

## Executive Summary

Emergency Services Consulting International (ESCI) was retained by the City of Kirkland, Washington, to conduct an organizational evaluation, future planning and feasibility of cooperative service delivery study, and an organizational strategic plan for the Kirkland Fire & Building Department (KF&BD).

Initiated in January 2012, the project involved a review of a substantial amount of background



information and data supplied by the City of Kirkland and KF&BD staff. ESCI's associates spent four days on-site conducting stakeholder interviews with personnel from all levels of the City and the fire and building department. ESCI's methodologies included a detailed analysis of collected data. This information was combined with interviews of key staff members and the affected stakeholders, as well as direct

observation of facilities and apparatus, and became the foundation for the in-depth study of all aspects of the administrative, operational, and support services of the KF&BD's current service delivery.

### **Scope, Purpose, and Report Conventions**

The purpose of the study was to provide a third party independent organizational evaluation, a plan for the future, an assessment of the feasibility of cooperative efforts, and facilitation of the development of an organizational strategic plan for the KF&BD (Kirkland Fire & Building Department). Officials desired to understand how well the fire and EMS (emergency medical services) system is working and whether the fire department can provide services more efficiently. Specifically, the scope of services requested by the City of Kirkland included:

- A comprehensive review of the current conditions of the KF&BD, including a baseline assessment and current service delivery performance analysis
- A focused, objective analysis of overall fire department emergency response operations
- Development of an inventory of opportunities under which the KF&BD (Kirkland Fire & Building Department) and its neighboring emergency response agencies can work more closely together to increase efficiency and effectiveness.

- Identification and analysis of the feasibility of strategies
- Based on the identified cooperative service delivery options:
  - Findings and the feasibility of each option
  - Identification of the preferred option or options
  - Description of governing body actions and necessary policy action
  - Implementation timelines and recommendations
  - Process issues including legal considerations, management and governance, and funding
- Facilitate the development of a KF&BD strategic plan document involving:
  - A local planning team (12 to 20 persons) including representatives of city management and various levels of the agency itself
  - A two-day strategic planning retreat
  - An analysis of the strengths, weaknesses, opportunities for, and threats to the organization
  - Identification of critical issues
  - Development of a vision, mission, and values statements
  - Establishment of goals and objectives
  - Establishment of performance measures

### Report Layout

The organizational evaluation, assessment of current conditions, findings, feasibility of cooperative efforts, and strategic planning is catalogued into the following subject areas:

- Organizational and Community Overview
  - Kirkland Community Description and Demographics
  - City of Kirkland Organization Description
  - Fire and Building Department
- Fire and Building Department Findings and Recommendations
  - Summary of Stakeholder Input
  - Department Mission and Values
  - Management Components
  - Emergency Management (Disaster Preparedness)
  - Fire Prevention Bureau
  - Fire and Emergency Medical Services (Emergency Response)
  - Accountability and Reporting
- Strategic Plan Recommendations and Priorities

- Major Findings and Recommended Priority Goals
- Strategic Goals
- Appendices

Each section in the report provides the reader with general information about that element, as well as observations and analysis of any significant issues or conditions. ESCI's observations are supported by data collected as part of the document review and interview process. Specific recommendations are included to address identified issues and opportunities for service improvement, efficiencies, and future cost avoidance.

The purpose of this review and evaluation is twofold: First, it provides the KF&BD and City with a valuable assessment of the organization, its assets, and service delivery methods. Secondly, the review equips ESCI staff with a detailed and comprehensive understanding of the KF&BD, which is essential to the strategic planning process and determining potential cooperative service delivery efforts with other emergency service providers.

### **General Assessment**

It is the professional opinion of ESCI that the Kirkland Fire and Building Department is a high-quality organization with the potential to become a great organization. The staffs are dedicated and skilled professionals committed to providing the City of Kirkland's citizens and visitors with the highest possible level of service. Elected officials for the City of Kirkland all recognize the high degree of importance of these services in ensuring the public safety of their community. Citizens and visitors can be assured that the members of the KF&BD are professional in the delivery of fire and emergency medical services. The level at which service is delivered is commensurate with other fire departments in the region.

An operational tension has developed between the KF&BD and other City departments. While there is no single reason for the division, the divisive relationship is hampering the Finance and Administration Department, Human Resources and Performance Management Department, City Manager's Office, and the Fire & Building Department from operating as efficiently as possible. To a lesser degree the rapport is challenged with other departments. During the time of this study the City administration has initiated corrective actions to improve relations. The process of improving working relationships will take time and effort but is necessary for the City departments to operate effectively.

ESCI found other areas of concern that impede the efficient operation of the KF&BD, primarily in the administration and support level. Work efforts of the two deputy fire chiefs should be directed at the highest level of administration and oversight of the fire department. Presently a large percentage of time is dedicated to work unrelated to administration. Updating job descriptions and affirming the expectations of administration and support staff is required.

It is our opinion that the number of KF&BD support staff is inadequate to meet the needs of the fire department and the expectations of the City. While it is possible to assign a staff person responsibility to work directly with the fire department from finance, IT, or HR, so far this approach has not been effective. Even if this assignment arrangement were successful, the KF&BD requires additional administrative and support positions. Support staffing has remained static or decreased even as the number of emergency operations personnel and the services of the fire department have increased.

An issue compounding the administration and support staffing problem has been KF&BD's inability to harness technology. Without integration of technology tools, the fire department will continue to struggle to provide information for analysis and benchmarking performance based outcomes. Successful implementation of the New World CAD by NORCOM is seen as one of the primary solutions to the problem.

An Efficiency and Effectiveness Study commissioned by the City of Kirkland and King County Fire District #41 was conducted on the KF&BD in 2008. Many of the study's major findings and major recommendations have not been addressed and are still outstanding.<sup>1</sup> They include:

- The high level of EMS responses has the unintended consequence of lowering the level of fire protection.
- KF&BD is totally dependent upon mutual and automatic aid response for marine rescue/firefighting.
- The measurement of response time standard is flawed and overly ambitious.
- EMS response crew size should be reduced from three to two.
- KF&BD failed to meet response time standard 50 percent of the time from 2004-2007.

To discourage this organizational evaluation, feasibility, and strategic plan from lying fallow, ESCI recommends the Kirkland City Council prioritize and adopt the goals found in this report. To have a fruitful outcome of the recommended top priority goals requires the KF&BD to have

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<sup>1</sup> See Appendix B: Management Advisory Group, Recommendations and Findings.

the authority, resources, responsibility, and accountability for implementation. To that end each strategic plan goal includes:

- Goal Statement
- Recommended Actions
- Implementation Metrics
- Resources Required

All of the pieces are in place for the KF&BD to become the organization, “known for consistently meeting our citizens’ needs and epitomizing a winning “major league” team; our efforts build community ownership and pride in our brand.<sup>2</sup>”

### **Fire and Building Department Findings and Recommendations**

A total of 90 recommendations are provided throughout this report. The following sections summarize the major findings and key recommendations related to each.

#### *Organizational and Community Overview*

Organizational and community overview is a summary of basic information about the City of Kirkland, Washington, and the Kirkland Fire and Building Department. It includes an overview of City governance; organizational structure; service area size; the community environment; resources dedicated to the fire and emergency medical services (EMS), the building division, and emergency management; and a financial survey. Significant findings include:

- ❖ Kirkland’s 2011 population is estimated to be 80,505, a 62.24 percent increase from 2010. The increase is connected to the annexation of Fire District #41, a portion of Fire District #36 (Woodinville), and a small area of Fire District #34 (Redmond). Annexation increased the service area slightly as KF&BD already provided contracted service to King County FD #41 prior to the annexation.
- ❖ KF&BD’s organizational structure, while atypical in that the director has oversight of building services, emergency management, and the fire department, is functioning well.
- ❖ KF&BD’s most recent survey by the WSRB (Washington Surveying and Rating Bureau) was in June 1995. Improvements in staffing, apparatus, and fire stations suggest that KF&BD would benefit from a re-evaluation by WSRB.
- ❖ Kirkland has developed financial long-term plans for operating KF&BD that include a CIP (capital improvement plan) for the acquisition of major assets for the fire department.
- ❖ In March of 2011, KF&BD began charging for BLS (basic life support) EMS transports from medical incidents.

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<sup>2</sup> Source: KF&BD Strategic Goal No. 1, Goal Statement.

### Fire and Building Department

The single largest change to occur for the City of Kirkland in years was the annexation in June 2011. KF&BD was already providing contract fire and emergency services to Fire District #41 and added coverage to a portion of Fire District #36 (Woodinville) and a small area of Fire District #34 (Redmond) as a result of the annexation. While KF&BD added emergency response personnel to serve the annexed area, there was no corresponding increase in administration and support. Recommended actions include:

- ❖ Amend job descriptions to accurately reflect roles and expectations for administration and support staff.
- ❖ Increase emergency operations by adding a BLS aid unit staffed between 8:00 AM and 8:00 PM to maintain adequate personnel for a moderate risk fire event.
- ❖ Annually conduct a detailed analysis of revenue versus expenditure to validate that EMS transportation activity is meeting stated goals established by the City.
- ❖ Bill for EMS transport when responding and transporting patients outside of the City of Kirkland.
- ❖ Add one FTE administrative assistant for EMS and one FTE financial analyst to administrative support functions.

### Summary of Stakeholder Input

To validate the mission, vision, and values of the KF&BD, ESCI solicited input from internal and external stakeholders (City Council, City Management, KF&BD Members, neighboring service providers) through two separate venues: one-on-one interviews conducted by the ESCI team during the initial data gathering process and a citizens group formed to participate in the strategic planning process. As part of the interview process, the internal and external stakeholders were asked to identify their perspectives on the department's strengths and weaknesses, as well as the challenges facing the department and critical issues it needs to address. The most frequently reported input for each was:

- Organizational Strengths
  - Community satisfied with service
  - Best trained and highest morale in the area
  - Training division is good; personnel are well trained
  - Department has good people and a good leader
- Organizational Weaknesses
  - Geography; jurisdictional boundaries
  - Money
  - Need for a fireboat

- Stability and predictability in costs; any incident will generate overtime
- Containing growth of call volume; growing number of non-emergency calls
- External political forces
- Challenges
  - Response time
  - Slow growth of expenses
  - Funding, leadership, too few administrative staff
  - Overpricing of service
  - Housing prices down
  - Underprepared for a disaster
- Critical Issues
  - Coverage in annexation area
  - Funding that is sustainable for all city departments
  - Funding, levy approval for Medic One program
  - Ongoing workload/cultural shift
  - Need to be more community connected; need to be more agile in addressing change

### Department Mission and Values

A validated mission statement is clearly stated and intentionally simplistic; the Kirkland Fire Department *Mission* accurately describes the organization's general purpose. The Mission Statement for the Kirkland Fire Department validated during this study is:

*Providing timely, emergency response and safeguarding the lives, property, and environment of our community.*

### Management Components

Fundamental tools necessary for organizational management are inadequate. ARs (administrative rules) and SOGs (standard operating guidelines) specific to the fire department were generally outdated. Additionally, variations exist between City and KF&BD AR documents including safety, purchasing, and public access to records and document retention. There should be a sense of urgency given to developing a complete set of documents.

Internal tension between the KF&BD and Finance and Administration (F&A) is concerning, though recent moves on the part of the two directors has made what is described as "improvement" to the working relationship.

KF&BD's management of external communication efforts has been reduced to reacting to media worthy events.

Highlights and ESCI recommendations for management components include:

- ❖ Outsource development and maintenance of Administrative Rules and Standard Operating Guidelines to a third party. Development and maintenance of Administrative Rules and Standard Operating Guidelines should include involvement of the City human resource department.
- ❖ Prioritize media messaging. Use "Currently Kirkland" and other media outlets as a tool to leverage the reach and impact of fire department public information and education messages.
- ❖ Develop a procedure and policy for reporting and retaining all employee exposure records.
- ❖ Establish a medical baseline for new firefighters at the time of hire/appointment.
- ❖ Provide a fire service-related occupational and health program.

#### Emergency Management (Disaster Preparedness)

Given the number of tasks and functions required of managing an emergency management program, KF&BD is performing well considering the lack of FTEs allocated to the program. However, this comes at an opportunity cost to the fire department by squeezing out other program needs (financial, HR, and IT services to name a few) that would otherwise be provided by the deputy chief of administration. Acquiring additional staff to provide the daily work necessary to maintain a state of readiness would free the deputy chief to perform other essential tasks directly related to the administration of the fire department, relegating the emergency management workload to providing management guidance and gravitas to the program.

Highlights and ESCI recommendations for emergency management include:

- ❖ Develop and implement a plan outlining how volunteers will be used and managed during emergency events.
- ❖ Identify a location and develop a dedicated EOC; apply for a matching grant from the Washington EMD Emergency Operations Center Grant Program (requires a 25 percent local match).
- ❖ Complete and publish the Continuity of Operations (COOP) and Continuity of Government (COG) plans.
- ❖ Develop a Hazard Identification and Vulnerability Assessment and a Hazard Mitigation Plan. Submit to King County for inclusion as an annex to the County plan.
- ❖ Hire a full-time City emergency manager, shifting daily responsibilities from the Deputy Chief of Administration to the emergency manager.



### Fire Prevention Bureau

The City of Kirkland's process for construction permitting delivers a higher level of service than is commonly seen by involvement of the fire and building departments from pre-application conference for commercial developments and continuing throughout the construction process.

KF&BD current completion rate for scheduled annual inspections of an estimated 20 percent may expose emergency services personnel and public to unacceptable risk during a fire event.

Fire and life-safety public education efforts of the KF&BD were limited to outside special requests that have since been discontinued.

Highlights and ESCI recommendations for the fire prevention bureau include:

- ❖ Integrate KF&BD fire prevention records management with the EnerGov RMS software used by the Building Division.
- ❖ Conduct a fire and life-safety inspection of all inspectable occupancies in the next 12 months. If necessary use emergency services personnel to complete inspections.
- ❖ Develop and adopt a plan for the maintenance, repair, and flow testing of all fire hydrants in the City of Kirkland.
- ❖ Acquire and deploy electronic tablet devices for field data entry and rapid downloading to the records management system.
- ❖ Adopt a local residential sprinkler ordinance for new residential construction.

### Fire and Emergency Medical Services (Emergency Response)

The hierarchal structure of the KF&BD operates as intended with the building services manager. In contrast, ESCI found that in practice the fire chief is the direct report for any number of other fire department personnel and activities. Deputy fire chiefs routinely perform administrative, technician, and clerical tasks. Time devoted to activities outside of essential functions and principal accountabilities have reduced the deputy chiefs' availability to perform job critical administrative and supervisory duties.

Given the number of FTEs dedicated to emergency operations (a minimum staffing of 19 per day, 30 personnel assigned to each shift), KF&BD's use of overtime is appropriate. Leave time use categorized as sick leave and injury is considered to be high.

EMS is expected to continue as the predominate factor affecting service demand. ESCI recommends that the KF&BD move forward and analyze the feasibility of contracting ALS response services with Medic One.

Capital facilities, apparatus, and capital equipment for the KF&BD constitute a large investment. Planning for remodels and the replacement of fire stations is a major capital expense and requires long-range planning. With two fire stations nearing their life expectancy, ESCI recommends that a capital plan for the rebuild or replacement of fire stations be developed. It is further recommended that KF&BD develop an internal long-term plan for funding the maintenance and replacement apparatus and capital equipment that aligns with the City CIP. The KF&BD pay rates into internal service fund reserves for facility and vehicle replacements and a sinking fund for replacement of equipment is being developed in cooperation with the Finance Department.

KF&BD relies on automatic aid to have adequate personnel for most fire incidents. Over the past two years, each of the neighboring fire and EMS agencies has gone through some reduction of fire stations, staffed apparatus, or personnel. To mitigate the reduction and improve coverage to the northwest (Finn Hill) area of the City, ESCI recommends that the KF&BD construct and staff a joint fire station with the Northshore Fire Department.

There are two alternative methods for KF&BD to meet the current adopted response time objectives. First, change the response time objectives to match the response that the fire department is able to meet. Second, add facilities, emergency response units, and personnel to the department to the level that will meet the response objectives. For Kirkland to increase resources requires a large capital investment and ongoing expenditures. Capital requirements involve the addition of two fire stations, one in the Finn Hill neighborhood and a second in the southern section of the City. Each fire station would need an engine and aid unit and a minimum of six personnel per day to cross-staff the units.

Of the potential partnerships with neighboring fire and EMS service providers, ESCI considers Northshore and Bellevue fire departments to be feasible partners. Consolidation of fire and EMS into a single operational unit, either through Interlocal Agreement (ILA) or the formation of an RFA would provide increased fire and emergency service efficiency in the areas served by the three fire departments.

ESCI developed 34 cooperative efforts strategies that the KF&BD could pursue. They are judged as being feasible and most likely to result in significant improvement to systems and/or programs. These strategies should be acted on regardless of action on a regional partnership.

Highlights and ESCI recommendations for fire and emergency medical services include:

- ❖ Store personnel protective equipment (PPE) in a separate, well ventilated room.
- ❖ Establish a minimum requirement for annual company and individual training evaluations. Include shift battalion chief involvement in annual evaluations.
- ❖ Jointly construct and staff a new fire station with Northshore FD. The fire station should be located in an area to serve the Finn Hill neighborhood and Northshore FD.
- ❖ Provide Advanced Life Support (ALS) services within the City of Kirkland via the King County Medic One program.
- ❖ Modify the EMS response protocol of sending three responders to medical incidents. Redeploy with dedicated staffing of two-person aid units, or single person quick response unit for low priority EMS incidents.
- ❖ Expand the current partnership with the King County Sheriff's Marine Unit and the Seattle Fire Department to provide a joint, coordinated response to marine firefighting and rescue incidents.

### Accountability and Reporting

While the KF&BD is mostly meeting accountability and reporting requirements, there is a need for improvement. The accreditation process is one way for a fire department to make certain it is covering all of the accountability and reporting bases. The process of becoming an accredited agency is a time consuming, labor intensive, costly process. Therefore ESCI has recommended that the KF&BD make accreditation a long-term item and focus on other issues first.

In the last *Response Time Objectives Report* submitted (2010), KF&BD did not define the geographic areas where requirements are not being met, or explain predictable consequences, or the steps necessary to achieve compliance. KF&BD is meeting its stated response performance goals (including turn out time) approximately 50 percent of the time. KF&BD has not developed options to improve response performance. Without action to improve response time performance, subsequent reports will include similar results.

Tools for the reporting and archiving of data and information of KF&BD activities are labor intensive. This is exemplified by the number of staff hours required to capture background information for this study. Most of the improvements to reporting hinge on deployment of the New World CAD. Efforts should be directed at the implementation of the CAD system.

ESCI recommends that KF&BD disseminate reports (information) in a dashboard display customized for the end user.

Highlights and ESCI recommendations for accountability and reporting include:

- ❖ Adopt a two tiered response time objectives for fire, EMS, hazardous materials, technical rescue, and specialized rescue incidents.
- ❖ Develop and adopt response time intervals, benchmark, and review at a minimum annually.
- ❖ NORCOM – Establish communication center performance measurement benchmarks that meet national standards.
- ❖ Adopt turnout time standards based on incident type and time of day.
- ❖ Integrate the New World RMS (records management system) with emergency management plans, records, and reports.

### **Major Findings and Recommended Priority Goals**

ESCI's recommended priority goals for the KF&BD result from stakeholder interviews with community members, policymakers, administration, KF&BD, neighboring fire department leadership, the organizational evaluation, and ESCI's analysis and experience. Recommended priority goals were developed in recognition of what is important to the public. Initiatives and key priorities were assigned recommended actions and implementation metrics to track progress over time. The goals are ambitious but realistic targets that are achievable.

#### **Goal No. 1: Administrative Infrastructure**

Goal Statement: Build an administrative infrastructure that efficiently provides administration and support functions for KF&BD. (Administrative and support staff realignment, administrative rules, and guidelines)

#### **Goal No. 2: Staffing and Deployment**

Goal Statement: Increase the ready availability of fire apparatus and personnel. (Swing staffing of aid units and engine/ladder companies and staffing levels)

#### **Goal No. 3: Outreach and Education**

Goal Statement: Provide contemporary, practical fire prevention, EMS, and emergency management education and informational services to the community. (PIO, PEO, and community preparedness)

#### **Goal No. 4: Performance**

Goal Statement: Develop, measure, and meet response and measurable performance benchmarks. (Response time)

### **Goal No. 5: Partnerships**

**Goal Statement:** Develop partnerships with neighboring fire and EMS agencies to improve services and the level of service in a cost efficient manner. (Training, maritime response, joint staffing of fire stations, RFA)

### **Strategic Goals**

The following are ESCI's recommended strategic goals internal to the KF&BD. Community members, policymakers, administration, and KF&BD personnel participated in a two day process to assist in developing priorities for the Kirkland Fire Department strategic plan. Five of the seven are incorporated as top priority goals. The remaining two are internal strategic organizational goals that meld with the validated mission, vision, and values of the KF&BD.

#### **Strategic Organizational Goal No. 1: KF&BD Branding**

**Goal Statement:** Create an attractive brand for KF&BD to inform and market our services

#### **Strategic Organizational Goal No. 2: KF&BD Internal (City) Relationships**

**Goal Statement:** Enhance a positive culture with internal customers; Kirkland Fire Department and other City Departments



## Organizational and Community Overview

### Kirkland Community Description and Demographics

The Organizational and Community Overview section provides information and establishes a starting point of facts about the City of Kirkland, Washington, and the Kirkland Fire & Building Department (KF&BD). It includes an overview of City governance; organizational structure; service area size; the community environment; resources dedicated to the fire and emergency medical services (EMS), the building division, and emergency management; and a financial survey. A detailed analysis of the service delivery system is provided in a subsequent section. *(Historical statistical information and data on population, demographics, annexation, and land-use in the overview are used in the service demand forecast for KF&BD.)*

#### Service Area Population and Demography

Located on the eastern shore of Lake Washington east of Seattle, Kirkland has a unique downtown waterfront (the only Eastside downtown frontage along Lake Washington's shoreline),<sup>3</sup> lined with restaurants, galleries, a performing arts center, public parks,<sup>4</sup> and beaches. Kirkland is considered a suburban city, surrounded by other suburban cities and pockets of unincorporated King County. Major transportation routes serving the area include Interstate 405, Washington State Route 520, and Interstate 5. These routes connect the City economically and socially to the greater Seattle area.<sup>5</sup>



Kirkland was founded in 1890 by Peter Kirk (1860–1916), an established steel mill owner from Workington, England.<sup>6</sup> Since only U.S. citizens were allowed to own property, Kirk with the help of Leigh A. J. Hunt, publisher of the *Seattle Post-Intelligencer* in June of 1888, purchased 5,000 acres. Streets were platted and homes were built for the workers that would be needed to run the mill. Modeled after Kirk's mill in England, it would employ thousands of workers who would

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<sup>3</sup> Peyton Whitely (1998-02-25). "Kirkland's downtown dilemma rules to save local flavor could price it out of existence". *The Seattle Times*, Retrieved March 21, 2012.

<sup>4</sup> Photograph of Marina Park, permission granted for use, GNU Free Documentation License.

<sup>5</sup> Source: City of Kirkland, Washington Comprehensive Annual Financial Report, For the Fiscal Year Ended December 31, 2010, Tracey Dunlap, Director of Finance and Administration, page 4.

<sup>6</sup> A Look To The Past: Kirkland: From wilderness to high-tech - Kirkland history in 50 vignettes, Matthew, W. McCauley, CreateSpace (November 23, 2010).

live in the city that would grow around it. Proclaimed as the "The Pittsburgh of the West", the mill never produced any steel or iron but a city had been born.

From the 5,000 original acres in 1890, Kirkland grew to 10.70 square miles over the next 120 years (1890 to 2010). In 2011 through an annexation of the Juanita, Finn Hill, and Kingsgate neighborhoods, Kirkland is now approximately 17.90 square miles.<sup>7</sup> A chronological history of annexations and geographic growth of the City of Kirkland shows that it has grown in size on 12 different occasions (Figure 1).

**Figure 1: City of Kirkland Annexation History**

Years	Square Miles Annexed	Cumulative Square Miles
1905 – 1910	0.88	0.88
1910 – 1920	0.00	0.88
1920 – 1930	0.01	0.89
1930 – 1940	0.00	0.89
1940 – 1950	1.00	1.89
1950 – 1960	0.11	2.00
1960 – 1970	3.39	5.39
1970 – 1980	0.84	6.23
1980 – 1990	4.19	10.42
1990 – 2000	0.00	10.42
2000 – 2010	0.00	10.42
2010 – 2011	7.80	17.90

Figure 2 is a visual depiction of annexations to the City of Kirkland.<sup>8</sup>

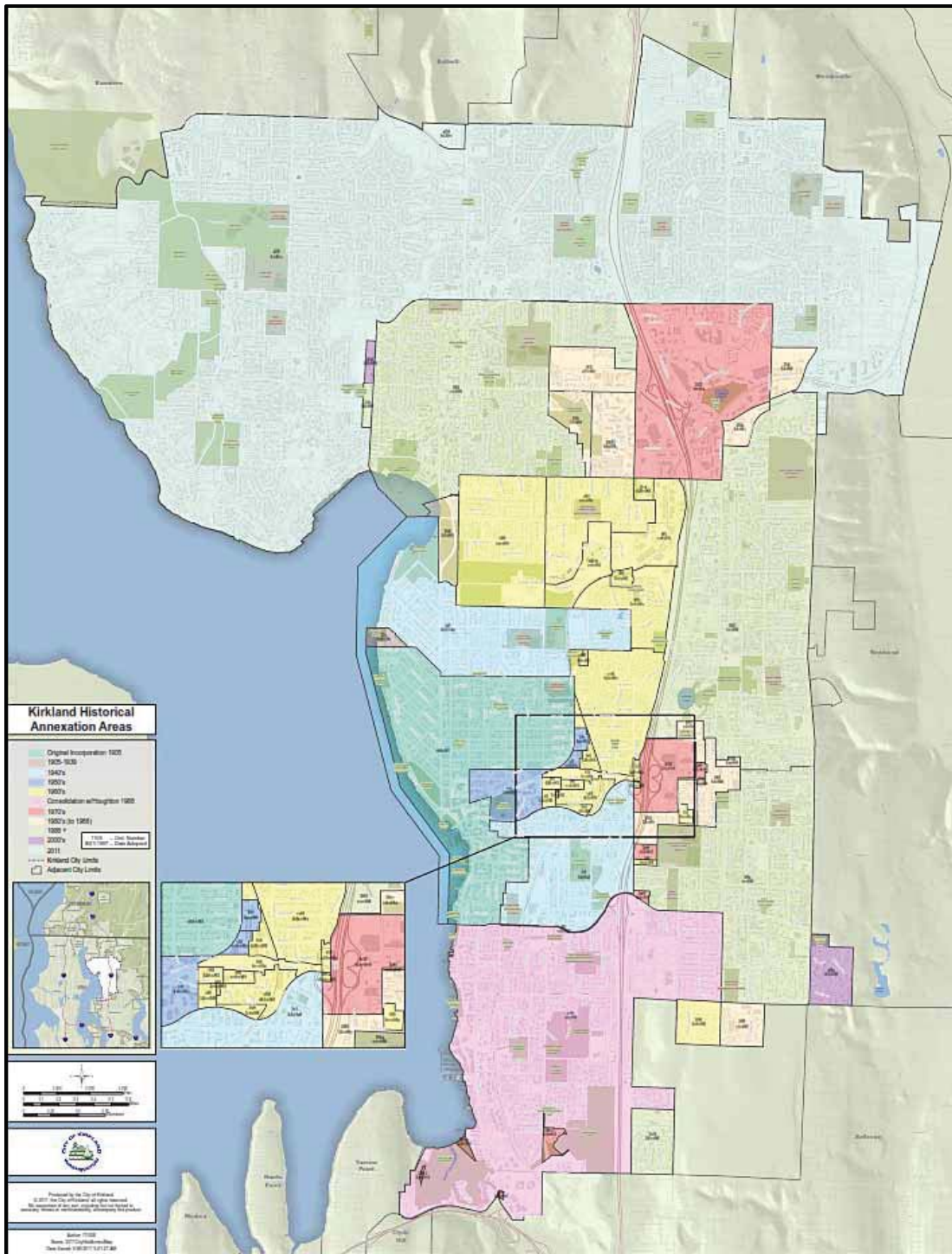
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<sup>7</sup> City of Kirkland background data lists 17.9 square miles in the City.

<sup>8</sup> Source: City of Kirkland GIS Administrator, Karl Johansen.



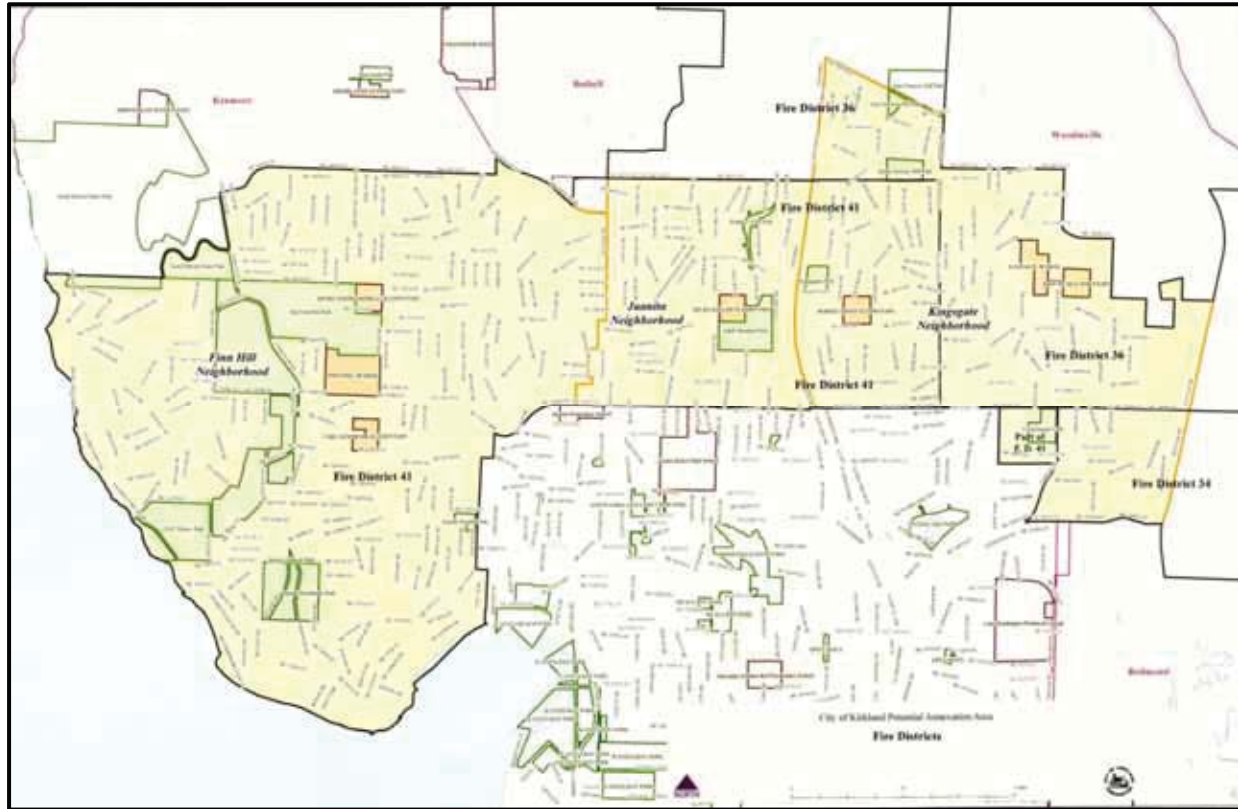
Figure 2: City of Kirkland Annexation History Map



While the City's footprint grew significantly in 2011, the area served by KF&BD increased only marginally. Under terms of a contractual relationship KF&BD already provided fire, EMS, and emergency response services to King County Fire Protection District #41 (KCFD #41). The new service area for KF&BD involved two smaller areas previously served by Woodinville and

Redmond. Figure 3 is a view of the June 2011 annexation area<sup>9</sup> and its relationship to the City of Kirkland.

**Figure 3: Annexation Area, June 2011**



The 2011 population of Kirkland is estimated to be 80,505, a 62.24 percent increase from 2010. The increase is connected to the annexation of Fire District #41, a portion of Fire District #36 (Woodinville), and a small area of Fire District #34 (Redmond).

As of the 2010 U.S. Census, there were 22,445 households and 12,014 families residing in Kirkland.<sup>10</sup> The population density was 4,762 people per square mile (1,628.8/km<sup>2</sup>). There were 24,345 housing units at an average density of 2,336 per square mile (789.2/km<sup>2</sup>).

<sup>9</sup> Community and Annexation Area map, City of Kirkland, Planning and Community Development.

<sup>10</sup> U.S. Census, 2010 Demographic Profile Data, City of Kirkland, WA.

## **City of Kirkland Organization Description**

### **Type of Government**

Kirkland is a charter city with a council-manager form of government. City Council is Kirkland's governing body and is comprised of seven non-partisan members elected by registered voters serving "at large" (not representing a district or ward). Council members are elected every two years, serving staggered four-year terms. The mayor and deputy mayor are elected among the members to serve two-year terms. Day-to-day oversight of the city is the responsibility of a City Manager hired by the city council.

### **Organizational Structure**

A well-designed organizational structure should reflect the lines of responsibility and authority within the agency, provide for the equitable distribution of the workload, and clearly define the official path of internal communication. The lines of an organizational chart visually clarify accountability, coordination, and supervision. Detailed job descriptions should provide the particulars of each job within the organization, helping to ensure that each individual's specific role is clear and focused on the overall organization mission.

Span of control, also known as span of management, is a human resources management term that refers to the number of subordinates a supervisor can effectively manage. Developed in the United Kingdom in 1922 by Sir Ian Hamilton, the concept of span of control evolved from the assumption that managers have finite amounts of time, energy, and attention to devote to their jobs. In his research of British military leaders, Hamilton found that leaders could not effectively control more than three to seven people directly.

This generally accepted rule of thumb for span of control is still considered relevant today and applies not only to the military, but correspondingly to the fire service. It is important to note that all managers experience a decrease in effectiveness as their span of control exceeds the optimal level. In other words, the limitations implied by span of control are not shortcomings of individual managers but rather of managers in general. In addition, it is important to understand that span of control refers only to direct reports rather than to an entire corporate hierarchy (i.e., all personnel in the fire department).

*Extending span of control beyond the recommended limits engenders poor morale, hinders effective decision-making, and may cause loss of the agility and flexibility that give many entrepreneurial firms their edge.<sup>11</sup>*

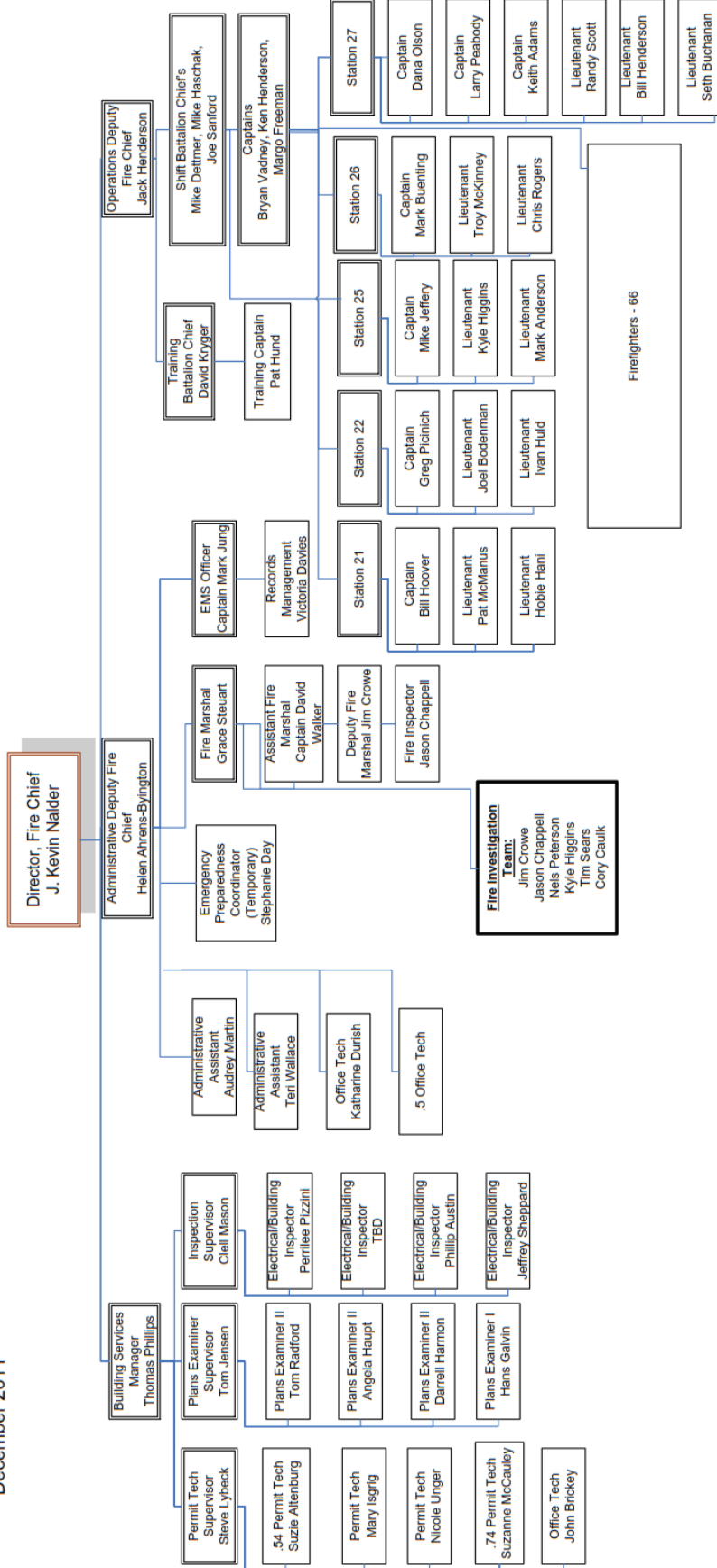
KF&BD's organizational structure is atypical in that the director has oversight of building services, emergency management, and the fire department. The fire department stem of the organization is a typical top-down hierarchy found in most public emergency service providers. The following figure (Figure 4) shows the current Kirkland Fire & Building Department organizational structure.

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<sup>11</sup> Hendricks, Mark, *Span Control*, Entrepreneur, January 2001.

**City of Kirkland**  
 Fire & Building Department  
 December 2011

**Figure 4: Kirkland Fire & Building Department Organizational Chart**



## **Operating Budget**

The current housing crisis and the reduction in appraised taxable value has caused a general slowing of or reduction in property tax revenue in some government agencies and municipalities. However, in the City of Kirkland, property tax revenue has not decreased but has grown at 1 percent per year due to the optional levy increase plus new construction ranging from 0.25 percent to 4 percent in the past five years, with projections assuming 1 percent for future new construction. This growth is forecast to continue as the City, with a 2012 levy rate of 1.36766 and a bond levy rate of 0.08976, is considerably below the maximum allowed for Washington cities (\$3.10 for Kirkland, since the City is annexed into the King County Library District).

Other factors impacting many cities are lack of economic growth and a flattening or decrease of revenue from fees for service and sales tax that are often a significant basis of revenue for cities. The City of Kirkland is facing some of these same issues. As one cost element in the City's budget, the fire and building department is competing with other departments for a contracting revenue stream. In the City's 2011 – 2012 \$231.5 million general fund biennial budget, fire and building represents 16.6 percent or \$38.3 million of the total general fund budget. Note that the total budget figure includes \$14.1 million in general government reserve balances; excluding those reserves, the fire and building department represents 17.6 percent of the general fund budget. The operation of the fire and building department is somewhat unique in that fire operations are primarily funded by the City general fund; the building division is partially funded with fees that are collected for its services, with the balance of the revenue from general fund resources. If budgeted fees for service are inadequate to support the building division's budget, then the division's costs may be reduced to meet revenue expectations and workload requirements.

The initial information in the analysis will display the historical review of costs of the Kirkland Fire Department. The second segment is a projection of costs through 2017.

### *Historical Financial Information Kirkland Fire and Building Department (KF&BD)*

KF&BD is operating as a cost center or department of the City of Kirkland. Funding for the department is through fees charged for services, primarily EMS-related and charges to King County Fire District #41 (prior to June 2011), and regional EMS levy and grants, with the balance of revenue being resourced from the City's general purpose revenues. KF&BD must

compete for these resourced funds with all other city departments and revenue is not increasing at the pace previously experienced.

KF&BD Revenue

The following figure provides a historical view of KF&BD actual revenue from 2008 through 2011 and budgeted revenue for 2012.

**Figure 5: KF&BD Revenue, 2008 – 2012**

Description	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Budget
Property Tax District #34, #36, #41	0	0	0	2,313,161	0
WFLSD Asset Transfer	0	0	0	0	1,426,568
Firework Permits	120	100	150	179	100
Recreational Fire Permits	0	0	474	316	79
Grants – FEMA	0	0	0	408	0
Grants – EMPG	0	58,287	88,714	103,130	50,000
Intergovernmental – Fire Control Service	0	12,690	648	65,174	0
Intergovernmental – District #41	3,439,879	3,904,235	3,580,280	2,083,640	0
Intergovernmental – EMS	793,023	838,397	831,434	840,146	866,729
Emergency Transport Fee	0	0	0	556,877	845,210
MBP Service Fee	0	0	0	44,430	33,000
City General Fund Resource	10,357,564	10,923,225	11,200,596	11,283,300	14,635,959
<b>Total Revenue</b>	<b>14,590,586</b>	<b>15,736,934</b>	<b>15,702,297</b>	<b>17,290,760</b>	<b>17,857,645</b>
Percent City General Fund Resource Increase		5.46%	2.54%	0.74%	29.71%

The City's general fund resourcing of the fire department has increased every year since 2008. Average annual general fund contributions increased 9.61 percent over the four years. Annual fluctuations during the period 2010 to 2012 can largely be attributed to the annexation which became effective June 1, 2011. Revenue that was received as intergovernmental charges for service from Fire District #41 through the District's separate levy ended in 2011. Funding is now provided by the City's regular property tax levy, causing a shift to the contribution of General Fund resources. Likewise, one-time revenue received from Fire District #41 and Woodinville Fire and Rescue were received during this period, further skewing actual revenue figures.

In March of 2011, KF&BD began charging for BLS (basic life support) EMS transports of patients from medical incidents. Since KF&BD has only been providing BLS transport services for a year, there is not enough history to develop a financial trend. ESCI recommends that a

detailed analysis of BLS transport revenue versus expenditure be conducted to validate that EMS transportation activity is meeting established City goals.

The figure below provides a snapshot of EMS transportation revenue from March 2011 through January 2012:

**Figure 6: KF&BD EMS Transportation Revenue, March 2011 – January 2012**

Month 2011	Transport Tickets	Gross Charges	Payments	Collection Percent	Levy Funding	Disallowed	Uncollected	Pending
March	180	116,099	(63,866)	55%	(5,591)	(35,463)	(6,473)	4,705
April	168	107,535	(58,186)	54%	(8,691)	(31,421)	(3,248)	5,990
May	169	108,667	(64,169)	59%	(6,395)	(30,611)	(628)	6,864
June	204	130,875	(68,436)	52%	(8,720)	(38,448)	(159)	15,112
July	195	125,119	(69,006)	55%	(8,001)	(32,701)	(1,335)	14,075
August	189	120,586	(64,729)	54%	(5,831)	(32,350)	(1,299)	16,376
September	195	125,591	(62,912)	50%	(6,855)	(39,803)	(2,362)	13,660
October	203	129,909	(63,500)	49%	(9,696)	(35,028)	0	21,684
November	184	118,551	(56,551)	48%	(3,736)	(33,663)	(0)	24,600
December	179	115,181	(39,747)	35%	(793)	(23,818)	0	50,823
Month 2012	Transport Tickets	Gross Charges	Payments	Collection Percent	Levy Funding	Disallowed	Uncollected	Pending
January	217	139,140	(7,325)	5%	0	(1,713)	0	130,102
<b>Total</b>	<b>2,083</b>	<b>1,337,253</b>	<b>(618,428)</b>	<b>54%</b>	<b>(64,310)</b>	<b>(335,020)</b>	<b>(15,505)</b>	<b>303,991</b>

The collection rate was forecast at 52 percent and the actual percentage for the first six months of the program was 54.88 percent. ESCI finds that collections exceeding forecast are positive indication of the benefit of the program. The amount of uncollected billings is considered to be in the low range. The lower collection percent in the most recent months is attributed to the lag time between billing and payment. Disallowed is the difference between the gross charges and what is allowable under insurance, primarily Medicare.

**Kudos 1:** *The City of Kirkland's decision to begin billing for BLS services is allowing KF&BD to capture available monies that were previously uncollected.*

The original plan decision included a proviso of not billing when KF&BD transported patients in neighboring jurisdictions if that department was not charging for the service. Recent changes in the billing practices of Bellevue Fire Department make it an appropriate time to revisit the subject. ESCI recommends that KF&BD bill for EMS when responding and transporting patients outside of the City of Kirkland.



KF&BD Expenditures

The figure below provides a historical view of KF&BD expenditures from 2008 through the 2012 budget year.

**Figure 7: KF&BD Expenditures by Department, 2008 – 2012**

Description	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Budget
Administration	881,929	1,065,297	1,056,591	1,233,046	1,314,428
Suppression	12,530,756	13,237,963	13,300,369	14,571,901	15,145,445
Training	470,273	577,057	498,593	631,666	547,632
Prevention	549,924	634,653	599,988	673,012	698,112
Emergency Preparedness	157,704	221,965	246,756	181,136	152,028
<b>Total Expenditures</b>	<b>14,590,586</b>	<b>15,736,934</b>	<b>15,702,297</b>	<b>17,290,760</b>	<b>17,857,645</b>

KF&BD total expenditures have increased by 22.39 percent since 2008. The annexation in 2011 resulted in the addition of an engine and cross staffed aid car to serve the area previously served by Woodinville. The cost of serving Fire District #41 was already included in the fire budget. After factoring out the annexation-related increase, the net increase was approximately 13.6 percent.

In Figure 8 KF&BD's expenditures are segregated by cost category from 2008 through 2012:

**Figure 8: KF&BD Expenditures by Cost Category, 2008 – 2012**

Description	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Budget
Salaries and Wages	9,138,030	9,688,144	9,853,930	10,055,150	10,592,947
Benefits and Taxes	2,690,799	3,156,578	2,937,976	3,629,545	3,801,592
Supplies	200,468	205,644	150,686	639,643	269,915
Other Services and Charges	394,503	383,538	412,477	387,207	366,390
Inter-fund Operating Leases	1,811,715	1,860,919	1,882,894	2,116,624	2,224,137
Intergovernmental Fund	355,071	442,111	464,333	462,592	595,664
Capital	0	0	0	0	7,000
<b>Total Expenditures</b>	<b>14,590,586</b>	<b>15,736,934</b>	<b>15,702,297</b>	<b>17,290,760</b>	<b>17,857,645</b>

The next figure provides a percentage breakdown of KF&BD expenditures by cost categories from 2008 through 2012:

**Figure 9: KF&BD Expenditure Percentage by Cost Category, 2008 – 2012**

Description	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Budget
Salaries and Wages	62.630%	61.563%	62.755%	58.153%	59.319%
Benefits and Taxes	18.442%	20.058%	18.710%	20.991%	21.288%
Supplies	1.374%	1.307%	0.960%	3.699%	1.511%
Other Services and Charges	2.704%	2.437%	2.627%	2.239%	2.052%
Inter-fund Operating Leases	12.417%	11.825%	11.991%	12.241%	12.455%
Intergovernmental Fund	2.434%	2.809%	2.957%	2.675%	3.336%
Capital	0.000%	0.000%	0.000%	0.000%	0.039%
<b>Total Expenditures</b>	<b>100.000%</b>	<b>100.000%</b>	<b>100.000%</b>	<b>100.000%</b>	<b>100.000%</b>
<b>Benefits &amp; Taxes as % of Wages</b>	<b>29.446%</b>	<b>32.582%</b>	<b>29.815%</b>	<b>36.096%</b>	<b>35.888%</b>

Approximately 81 percent of total costs are related to employee salaries, wages, benefits, and taxes. Inter-fund or governmental transfers account for 15.79 percent of total costs. Intergovernmental charges and allocations are actual expenditures of the City, although they are not directly controlled by the department. In tough financial times, inter-departmental charges should be examined independently from the fire department budget prior to discussing potential cost cutting strategies.

The next figure provides a percentage breakdown of the benefit and taxes line item from Figure 9 above.

**Figure 10: KF&BD Percentage of Benefits and Taxes, 2008 – 2012**

Description	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Budget
Medical, Dental, and Vision	15.039%	15.938%	15.306%	19.708%	20.532%
Pension	5.931%	5.906%	5.663%	5.701%	5.480%
Industrial Insurance	1.405%	1.498%	1.663%	2.553%	2.321%
MEBT	5.429%	5.478%	5.494%	5.517%	5.268%
Taxes and Other	1.642%	3.762%	1.690%	2.618%	2.134%
<b>Benefits &amp; Taxes as % of Wages</b>	<b>29.446%</b>	<b>32.582%</b>	<b>29.815%</b>	<b>36.096%</b>	<b>35.888%</b>

The fastest growing benefit cost, as a percentage of wages, is medical, dental, and vision increasing from 15.04 percent in 2008 to 20.53 percent in 2012's budget.

KF&BD Summary of Operational Finances

Figure 11 provides a historical summary of KF&BD operational revenue and expenditures from 2008 through 2012.

**Figure 11: KF&BD Summary of Operational Finances, 2008 – 2012**

Description	2008 Actual	2009 Actual	2010 Actual	2011 Actual	2012 Budget
<b>Revenue</b>					
Revenue w/o General Fund Resources	4,233,022	4,813,709	4,501,701	6,007,461	3,221,686
City General Fund Resource	10,357,564	10,923,225	11,200,596	11,283,300	14,635,959
<b>Total Revenue</b>	<b>14,590,586</b>	<b>15,736,934</b>	<b>15,702,297</b>	<b>17,290,760</b>	<b>17,857,645</b>
<b>Expenditures</b>					
Salaries & Wages	9,138,030	9,688,144	9,853,930	10,055,150	10,592,947
Benefits & Taxes	2,690,799	3,156,578	2,937,976	3,629,545	3,801,592
Supplies	200,468	205,644	150,686	639,643	269,915
Other Services & Charges	394,503	383,538	412,477	387,207	366,390
Inter-fund Operating Leases	1,811,715	1,860,919	1,882,894	2,116,624	2,224,137
Intergovernmental Fund Capital	355,071	442,111	464,333	462,592	595,664
Capital	0	0	0	0	7,000
<b>Total Expenditures</b>	<b>14,590,586</b>	<b>15,736,934</b>	<b>15,702,297</b>	<b>17,290,760</b>	<b>17,857,645</b>

KF&BD Debt

KF&BD debt is paid through the City of Kirkland General Government Debt Service Fund. As of December 31, 2011, three debt obligations impact the fire department.<sup>12</sup> Figure 12 summarizes these transactions:

**Figure 12: KF&BD Debt Summary**

Description	Funding Source	Origination Date	Maturity Date	Origination Principal Amount	Principal Loan Balance of 12/31/11
North Rose Hill Fire Station	1992 UGOB	Refunded 7/6/2001	12/2/2012	1,730,000	185,000
Forbes Creek Fire Station	1995 UGOB	8/1/1995	12/1/2014	1,020,000	240,000
KCFPD #41 Bond	LGOB	5/26/2011	12/1/2021	4,000,000	4,000,000
<b>Total Debt</b>				<b>6,750,000</b>	<b>4,425,000</b>

The next table (Figure 13) displays the amortization schedule for these debt issues:

<sup>12</sup> KCFPD #41 debt obligation remains with District property owners.

**Figure 13: KF&BD Debt Amortization Schedule**

Loan Description	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
<b>Forbes Creek Fire Station Principal and Interest</b>										
Principal	75,000	80,000	85,000	0	0	0	0	0	0	0
Interest	88,643	89,405	89,845	0	0	0	0	0	0	0
<b>Total Cost</b>	<b>163,643</b>	<b>169,405</b>	<b>174,845</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>KCFPD #41 Principal and Interest</b>										
Principal	345,313	356,451	367,949	379,817	392,069	404,715	417,770	431,245	445,156	459,515
Interest	125,259	64,021	102,623	90,755	78,503	65,857	52,802	39,327	25,416	11,058
<b>Total Cost</b>	<b>470,572</b>	<b>420,472</b>	<b>470,572</b>	<b>470,572</b>	<b>470,572</b>	<b>470,572</b>	<b>470,572</b>	<b>470,572</b>	<b>470,572</b>	<b>470,572</b>
<b>North Rose Hill Fire Station</b>										
Principal	185,000	0	0	0	0	0	0	0	0	0
Interest	193,603	0	0	0	0	0	0	0	0	0
<b>Total Cost</b>	<b>378,603</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Combined Principal and Interest Cost</b>										
Principal	605,313	436,451	452,949	379,817	392,069	404,715	417,770	431,245	445,156	459,515
Interest	407,505	153,426	192,468	90,755	78,503	65,857	52,802	39,327	25,416	11,058
<b>Total Cost</b>	<b>1,012,818</b>	<b>589,877</b>	<b>645,417</b>	<b>470,572</b>	<b>470,572</b>	<b>470,572</b>	<b>470,572</b>	<b>470,572</b>	<b>470,572</b>	<b>470,572</b>

Debt on the North Rose Hill Fire Station will be retired in the current budget year and on the Forbes Creek Fire Station in fiscal year 2014.

Unfunded Liabilities

Three primary unfunded liabilities are normally applicable to the fire service: 1) open litigations or workers' compensation claims 2) accrued time as allowed by contract for vacation, sick leave, Kelly days, etc., and 3) unfunded actuarial accrued liabilities for pension and medical benefits.

- 1) Open litigation or workers' compensation claims: Information provided by Kirkland indicated that a summary of any open tort claims against KF&BD's liability policy, worker compensation policy, or other pending legal action is zero (0).
- 2) Accrued time as allowed by contract for vacation, sick leave, Kelly days, etc.: The City of Kirkland pays for the fire department employees' accrued vacation pay (and a portion of sick leave under certain conditions) upon separation from current employment. The liability is recorded in the City's annual financial statements.
- 3) Unfunded actuarial accrued liabilities for pension and medical benefits: On page 104 of the City of Kirkland 2010 Comprehensive Annual Financial Reporting (CAFR) document, the position for firefighter's pension and LEOFF1 retiree and medical/long-term care are reported. Figure 14 lists the actuarial liability of the firefighter pension from January 1, 2001, to January 1, 2010 (date of the most recent report).

**Figure 14: KF&BD Firefighter Pension**

Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liabilities	Unfunded Actuarial Liabilities	Funding Ratio
January 1, 2001	901,000	385,000	(516,000)	234%
January 1, 2004	1,015,000	547,000	(468,000)	186%
January 1, 2006	1,090,000	533,000	(557,000)	205%
January 1, 2008	1,305,000	469,000	(836,000)	278%
January 1, 2010	1,527,000	420,000	(1,107,000)	364%

The KF&BD firefighter pension fund funding ratio was 364 percent (overfunded) of actuarial liabilities as of January 1, 2010.

Figure 15 shows the actuarial liability of the unfunded LEOFF I medical/long-term care from January 1, 2006, to January 1, 2010 (date of the most recent report).

**Figure 15: KF&BD Unfunded LEOFF I Medical/Long-Term Care**

Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liabilities	Unfunded Actuarial Liabilities	Funding Ratio
January 1, 2006	0	11,360,000	11,360,000	0%
January 1, 2008	0	12,505,000	12,505,000	0%
December 31, 2009	0	10,724,000	10,724,000	0%
December 31, 2010	0	10,070,000	10,070,000	0%

The City has made a decision to make the LEOFF1 medical payments an operational expense with estimated cost of premiums and direct medical payments budgeted as an ongoing expense in a non-department budget. The City's actuaries have pointed out that any unused pension reserve (which is overfunded) can be made available for use toward the OPEB (Other Post Employment Benefits) liability. In addition, the City has set aside \$619,000 in a reserve toward this purpose (which does not show in the liability table because it is not a trust account). The LEOFF I liability has and will continue to decrease over the ensuing years.

*Capital and Vehicle Replacement Plans*

Kirkland uses a six-year CIP (capital improvement plan) to forecast the acquisition of major assets for the fire department. The plan is formally adopted by the City Council with the annual budget. Capital apparatus and equipment for KF&BD from the 2011 to 2016 CIP is shown in Figure 16 and Figure 17.

**Figure 16: KF&BD CIP Vehicle Replacement, 2012 – 2016**

Vehicle ID	Year	Description	Useful Life	2012	2013	2014	2015	2016
F609	1995	Seagraves Pumper	18	0	598,193	0	0	0
F213	2006	Chevy Suburban	8	0	0	74,192	0	0
F314	2006	Ford Aid Vehicle	8	0	0	210,682	0	0
F315	2006	Ford Aid Vehicle	8	0	0	210,682	0	0
F316	2007	Ford Aid Vehicle	8	0	0	0	218,000	0
F506	1997	Simon LTI Aerial	18	0	0	0	1,163,314	0
F216	2008	Chevy Suburban	8	0	0	0	0	84,439
F317	2008	Ford Aid Vehicle	8	0	0	0	0	225,630
<b>Total</b>				<b>0</b>	<b>598,193</b>	<b>495,556</b>	<b>1,381,314</b>	<b>310,069</b>

**Figure 17: KF&BD CIP Equipment Replacement, 2012 – 2016**

Project Number	Project Title	2012	2013	2014	2015	2016
PS 0066	Thermal Imaging Camera Replacement	133,000	0	0	0	0
PS 0067	Dive Rescue Equipment Replacement	0	58,900	0	0	0
PS 0071	SCBA Equipment Replacement	0	0	305,500	316,100	0
<b>Total</b>		<b>133,000</b>	<b>58,900</b>	<b>305,500</b>	<b>316,100</b>	<b>0</b>

Economic Indicators

Economic indicators specific to Washington, King County, and the local area will provide the historical basis for projecting future costs that affect the operation of the fire department. Information in this section is provided to substantiate the forecast and projected increases in TAV, revenue, and expenditures. To perform these projections, ESCI reviewed historical home retail sales information, unemployment statistics, and the ten-year CPI-W history.

Historic Residential Property Sales

State of Washington assessors use recent residential home sales to establish increases or decreases in new appraised values. Figure 18 is the number of home sales and the median value by quarter from 2006 through 2011 for the City of Kirkland.<sup>13</sup>

<sup>13</sup> <http://www.city-data.com/city/Kirkland-Washington.html>.

**Figure 18: Kirkland, Washington, Median Value and Home Sales, 2006 – 2011**

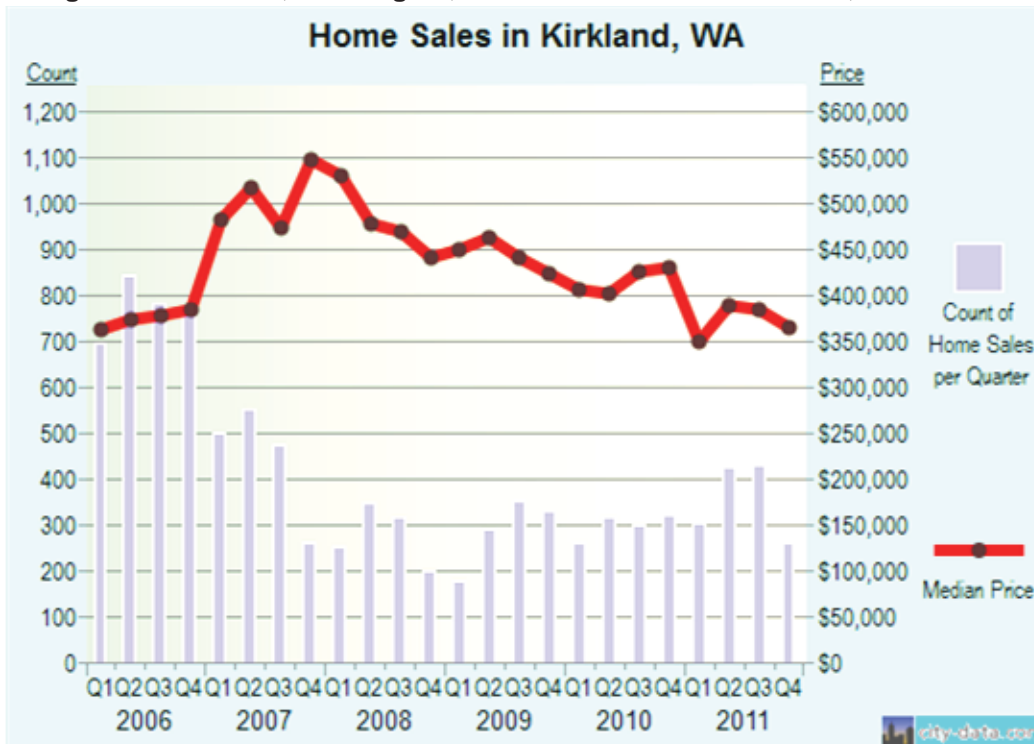


Figure 18 shows that the number of retail home sales declined significantly in 2007 and has not yet returned to the levels of 2006. The median sales price of existing homes has dropped from the 2007 high level of approximately \$550,000 to approximately \$355,000 in the fourth quarter of 2011. Note that a portion of this drop reflects the inclusion of the annexation area in the 2011 figure.

Historic Unemployment Rate

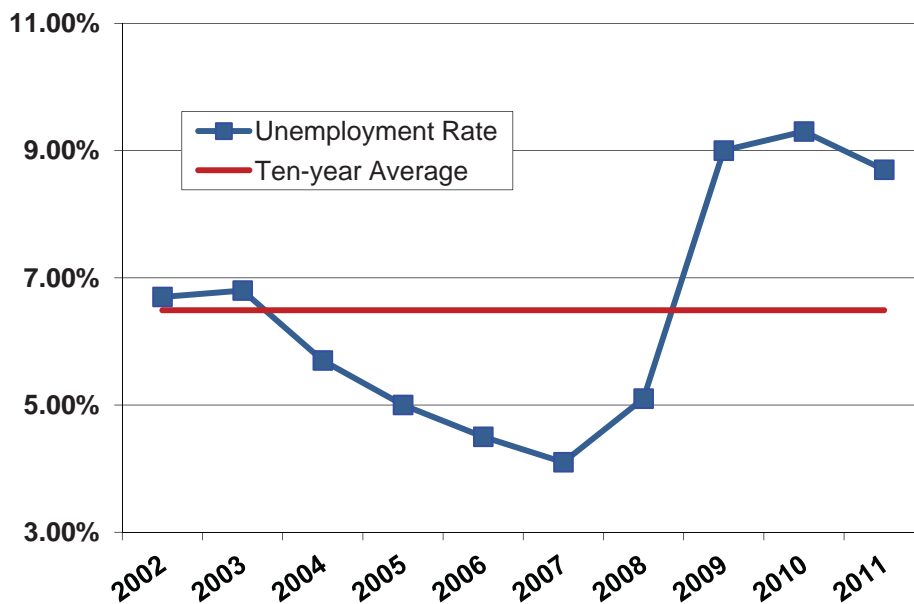
The level of employment in the region can potentially impact the number of homes being sold and the ultimate sales price. In Figure 19, the ten-year and average historic unemployment rates are shown for the Seattle-Tacoma-Bellevue area:

**Figure 19: Unemployment Percentage, 2002 – 2011<sup>14</sup>**

Year	Unemployment Rate	Ten-year Average
2002	6.70%	6.49%
2003	6.80%	6.49%
2004	5.70%	6.49%
2005	5.00%	6.49%
2006	4.50%	6.49%
2007	4.10%	6.49%
2008	5.10%	6.49%
2009	9.00%	6.49%
2010	9.30%	6.49%
2011	8.70%	6.49%

Historical unemployment percentages are graphically displayed in the following figure.<sup>15</sup>

**Figure 20: Unemployment, 2002 – 2011**



Annual Inflation Rate

Inflation is also an important consideration when forecasting cost. For the purpose of this analysis, ESCI will use the Consumer Price Index for all urban consumers (CPI-W), reported from June 2002 through June 2011 period for the Seattle-Tacoma-Bremerton Statistical Area as

<sup>14</sup> CPI-W historical information was provided by client.

<sup>15</sup> An increasing unemployment rate from 2007 through 2011 provides a strong indicator that the housing market will not improve significantly over the next few years.

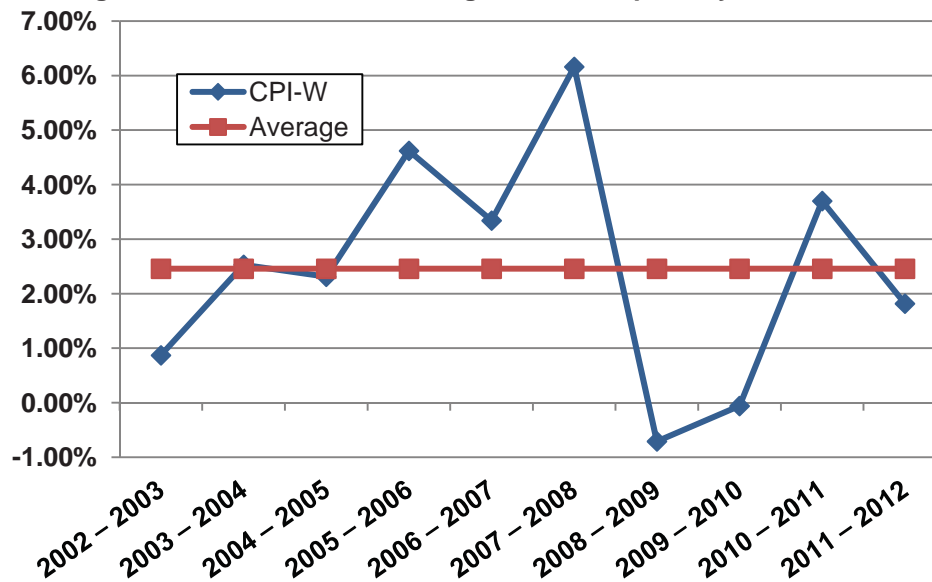


compiled by the U.S. Department of Labor, with the June 2011 to April 2012 average used for an approximation for 2012.<sup>16</sup> This measure is identified in the City's labor contracts. The information is displayed in both table and graphical format (below).

**Figure 21: Historical and June to June CPI-W Table, 2002 – 2012<sup>17</sup>**

Year	CPI-W	AVG
2002 – 2003	0.87%	2.458%
2003 – 2004	2.53%	2.458%
2004 – 2005	2.31%	2.458%
2005 – 2006	4.62%	2.458%
2006 – 2007	3.34%	2.458%
2007 – 2008	6.16%	2.458%
2008 – 2009	-0.71%	2.458%
2009 – 2010	-0.06%	2.458%
2010 – 2011	3.70%	2.458%
2011 – 2012	1.82%	2.458%

**Figure 22: Historical and Average CPI-W Graphically, 2002 – 2012**



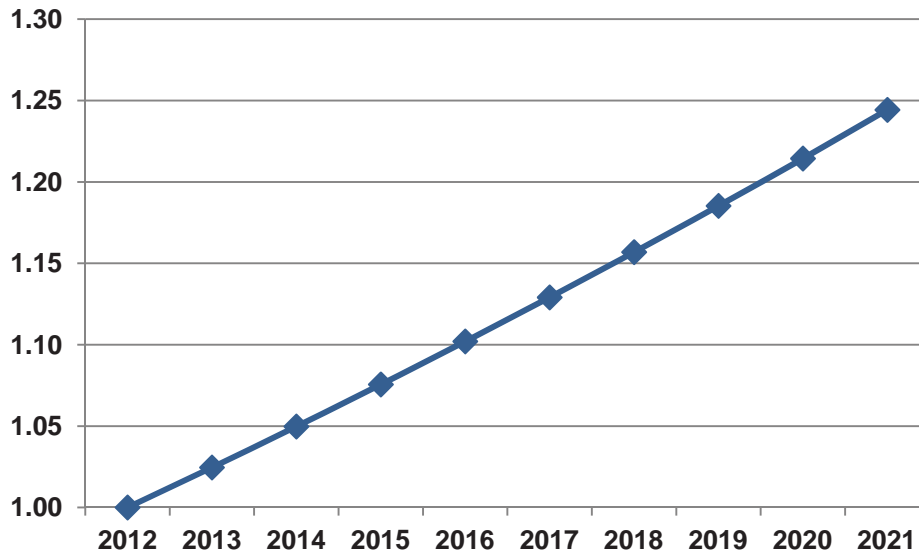
A historical review of the ten-year Consumer Price Index – Urban (CPI-W) shows that the prices were increasing an average 2.458 percent per year. This rate is used for analytical purposes in this financial review. The use of this value is an estimate to project potential cost trends in future years; however, the actual CPI-W for a given year could be higher or lower.

<sup>16</sup> U.S. Department of Labor, Bureau of Labor Statistics, Consumer Price Index—All Urban Consumers, Series Id: CWURA423SA0 Not Seasonally Adjusted, Seattle-Tacoma-Bremerton.

<sup>17</sup> The full year CPI-W has been released for 2011 – 2012 since the completion of this study.

Historical data was used to develop an inflation index for the years 2012 through 2021 as shown below. The CPI-W average increase will be applied to other revenue and expense categories of the 2012 budget to develop the forecast impact on the organization’s future financial stability.

**Figure 23: CPI-W Forecast Budget Impact, 2012 – 2021**



Expenditures in 2021 are projected to be approximately \$1.244 for each of today’s dollars.

Forecast Taxable Assessed Value

*Taxable Assessed Value (Re-assessment of existing property):* The county assessor’s office reviews and assigns revised property tax values annually with a legally mandated requirement for a site visit every six years. A projection for 2013 by the King County Assessor forecasts that 2013 residential values in the County will decline by approximately 1.25 percent. The King County Assessor projects that TAV will be flat in 2014 and then experience a slight growth of around 1 percent per year. The inflation assumptions used for TAV are shown in Figure 24 and the forecast TAV is provided in Figure 25:

**Figure 24: TAV Growth Rates, 2013 – 2017**

Year	TAV Change Percent
2013	-1.25%
2014	0.00%
2015	1.00%
2016	1.00%
2017	1.00%

**Figure 25: Forecast TAV, 2012 – 2017**

Description	2012 Budget	2013	2014
City of Kirkland	14,672,056,829	14,488,656,119	14,488,656,119
Description	2015	2016	2017
City of Kirkland	14,633,542,680	14,779,878,107	14,927,676,888

Revenue Forecast

In the 2012 budget, KF&BD generated approximately 18 percent of its revenue from non-city general fund resources. When projecting revenues categories ESCI used the ten-year average CPI-W of 2.458 percent for all non-city general fund resource line items.

**Figure 26: KF&BD Revenue Forecast, 2012 – 2017**

Description	2012 Budget	2013	2014	2015	2016	2017
Property Tax District #34, #36, #41	0	0	0	0	0	0
WFLSD Asset Transfer	1,426,568	0	0	0	0	0
Firework Permits	100	102	105	108	110	113
Recreational Fire Permits	79	81	83	85	87	89
Grants – FEMA	0	1,000	1,025	1,050	1,076	1,102
Grants – EMPG	50,000	51,229	52,488	53,778	55,100	56,455
Intergovernmental – Fire Control Serv.	0	0	0	0	0	0
Intergovernmental – District #41	0	0	0	0	0	0
Intergovernmental – EMS	866,729	888,033	909,861	932,225	955,140	978,617
Emergency Transport Fee	845,210	865,985	887,271	909,080	931,425	954,320
MBP Service Fee	33,000	33,811	34,642	35,494	36,366	37,260
City General Fund Resource	14,635,959	16,655,767	17,274,398	17,918,587	18,589,536	19,288,508
<b>Total Revenue</b>	<b>17,857,645</b>	<b>18,496,009</b>	<b>19,159,873</b>	<b>19,850,407</b>	<b>20,568,840</b>	<b>21,316,464</b>
Percent City General Fund Resource Increase	29.71%	13.80%	3.71%	3.73%	3.74%	3.76%

The financial impact of annexation is seen in the 29.71 percent increase in City general fund resources as funding shifted from District #41 contract payments to property taxes. The 13 percent increase in 2013 reflects the one-time asset transfer from Woodinville in 2012 that does not recur in the following years.

Expenditures Forecast

Forecast expenditures for KF&BD (2013 to 2017) rely upon the following assumptions and calculations:

- All wage and benefit expense categories were inflated at 2.458 percent, medical costs were increased by 7.00 percent per year.
- Inter-fund vehicle replacement expenses have remained at the 2012 budget level of \$491,943 increased by the ten-year average CPI-W of 2.458 percent.
- All other expense categories were increased at the ten-year average CPI-W of 2.458 percent.

**Figure 27: KF&BD Expenditure Forecast, 2012 – 2017**

Description	2012 Budget	2013	2014	2015	2016	2017
Salaries and Wages	10,592,947	10,959,251	11,338,222	11,730,298	12,135,931	12,555,592
Benefits and Taxes	3,801,592	3,995,455	4,200,385	4,417,076	4,646,261	4,888,721
Supplies	269,915	276,010	282,242	288,615	295,132	301,796
Other Services and Charges	366,390	374,663	383,123	391,774	400,620	409,666
Inter-fund Operating Leases	2,224,137	2,274,358	2,325,713	2,378,228	2,431,928	2,486,841
Intergovernmental Fund	595,664	609,114	622,868	636,932	651,314	666,021
Capital	7,000	7,158	7,320	7,485	7,654	7,827
<b>Total Expenditures</b>	<b>17,857,645</b>	<b>18,496,009</b>	<b>19,159,873</b>	<b>19,850,407</b>	<b>20,568,840</b>	<b>21,316,464</b>

Summary Expense Fund Balance

The following figure depicts the projected summary for each fund to provide a snapshot of the fund balance in the years 2012 through 2017.

**Figure 28: KF&BD Forecast Summary, 2012 – 2017**

Description	2012 Budget	2013	2014	2015	2016	2017
<b>Revenue</b>						
Revenue w/o General Fund Resources	3,221,686	1,840,242	1,885,475	1,931,820	1,979,304	2,027,956
City General Fund Resource	14,635,959	16,655,767	17,274,398	17,918,587	18,589,536	19,288,508
<b>Total Revenue</b>	<b>17,857,645</b>	<b>18,496,009</b>	<b>19,159,873</b>	<b>19,850,407</b>	<b>20,568,840</b>	<b>21,316,464</b>
<b>Expenditures</b>						
Salaries and Wages	10,592,947	10,959,251	11,338,222	11,730,298	12,135,931	12,555,592
Benefits and Taxes	3,801,592	3,995,455	4,200,385	4,417,076	4,646,261	4,888,721
Supplies	269,915	276,010	282,242	288,615	295,132	301,796
Other Services and Charges	366,390	374,663	383,123	391,774	400,620	409,666
Inter-fund Operating Leases	2,224,137	2,274,358	2,325,713	2,378,228	2,431,928	2,486,841
Intergovernmental Fund Capital	595,664	609,114	622,868	636,932	651,314	666,021
	7,000	7,158	7,320	7,485	7,654	7,827
<b>Total Expenditures</b>	<b>17,857,645</b>	<b>18,496,009</b>	<b>19,159,873</b>	<b>19,850,407</b>	<b>20,568,840</b>	<b>21,316,464</b>

Changes in the assumptions used for TAV, CPI-W, and wages and benefits could alter the overall projection of these values. While the assumptions and results above do not include any costs for the replacement of department vehicles, capital replacement is fully funded. Capital expenditures are funded by the fire department as transfers to reserves.

Cost Avoidance Planning

KF&BD maintains adequate internal controls over expenditures with all costs being applied for providing fire service to the residents of the service area. In looking at the detailed line item expenditures, the majority of the costs are from salaries and benefits. The major cost increases in these categories result from annual wage and medical benefit cost increases.

Future expenses should, to the extent possible, be indexed to projected revenues, other than service level enhancements. Expense growth in excess of revenue growth exacerbates the fiscal decline and is not sustainable. Another avenue to control and potentially reduce costs would be through a process of collaboration with neighboring agencies.

## **Fire and Building Department**

### **Overview of Fire and Building Department Services Provided**

Under the direction of the Director of the Fire and Building, Kirkland Fire & Building Department (KF&BD) provides a variety of non-emergency and emergency response services. Non-emergency services include:

- Plan review and permit issuance for construction
- Pre-submittal conferences
- Permitting – permit application routing and processing
- Construction inspections
- Issuance of operational permits for regulated activities
- Annual fire safety and life safety inspections in existing buildings
- Fire origin and cause determination
- Emergency management – community preparedness activities
- Code violation investigations
- Code and policy development and interpretation

Emergency response services include:

- Fire suppression
- Emergency Medical Services (EMS) response and Basic Life Support (BLS) transport
- Hazardous materials emergency response
- Entrapment and other technical rescue
- Emergency management
- Other specialized rescue services

The delivery of fire suppression and rescue services is no more effective than the sum of its parts. It requires efficient notification of an emergency, rapid response from well-located facilities, appropriate apparatus, with sufficient staffing, following a well-practiced plan of action. The most visible and valued of the services provided by the KF&BD is the response to and control of emergency events.

To operate in the emergency response environment effectively, fire departments must capitalize on managing various aspects of a large business enterprise. A lion's share of this effort goes

into supporting the primary mission, including those components shown in the list above. However, there are additional requirements that have to be met and a substantial infrastructure that must exist in order for the organization to function at its best.

### **Staffing by Function**

Kirkland Fire & Building Department is a service provider to a diverse urban community within a larger urban metropolitan area. This poses a challenge in that community growth and demand for services often outpaces organizational growth and available resources. The burden placed on management can be daunting. In addition to either matching or managing community expectations, the management of the business of a fire department always presents unique issues involving the administration of financial and personnel resources, the setting of goals and objectives, internal and external communications, information management, and security. This section of the report examines KF&BD's current management efforts and preparation for the future of the organization.

#### Department Staffing

One of the primary responsibilities of the KF&BD's administrative and support staff is to ensure that the operational elements of the organization have the ability and means to accomplish the emergency mission. Effective administration and support are vital to the success of the department. Without enough oversight, planning, documentation, training, and maintenance, the department will struggle to meet its operational commitments. On the other hand, if too many of the organization's resources are committed to administration and support, the operational element will likely suffer.

#### Administrative and Support

Comparing the ratio of administrative and support jobs to the total number of positions in the department helps to establish an understanding of the proper balance between internal and external services. Maintaining an appropriate proportion between the two is important to the success of the department's mission and responsibilities. Kirkland Fire & Building Department is comprised of six organizational functions:<sup>18</sup> one provides direct emergency service to the community (emergency services), and the other five augment or otherwise support that effort-- administrative services, fire prevention, emergency management, training, and building services. There are three direct reports to the fire and building department director/fire chief

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<sup>18</sup> Department Overview, City of Kirkland Fire & Building Department, City of Kirkland 2011 – 2012 Budget Document (final), page 222.

(Figure 4 on page 21): the building services manager, the administrative deputy fire chief, and the operations deputy fire chief.

Statistical information provided in the next section relating to FTEs by division and program is used when comparing KF&BD to other regional fire agencies (Appendix F: Comparable Providers).

The following table summarizes the personnel resources and full-time equivalents (FTEs) assigned to administration, management, and support functions of the KF&BD.

**Figure 29: Administrative and Support Staffing Summary**

<b>Career – Position Title</b>	<b>Number (FTE)</b>
Director of Fire and Building, Fire Chief	1.00
Deputy Fire Chief, Administration <sup>19</sup>	1.00
Deputy Fire Chief, Operations	1.00
Battalion Chief, Training	1.00
Captain, Training	1.00
Fire Marshal	1.00
Assistant Fire Marshal	1.00
Fire Inspector	2.00
Captain, EMS Billing	1.00
Administrative Assistant	2.00
Office Technician	1.50
<b>Sub-Total</b>	<b>13.50</b>
<b>Sub-Total, Percentage of Administrative and Support Staff to Total Personnel</b>	<b>13.04%</b>
<b>Emergency Management – Position Title</b>	<b>Number (FTE)</b>
Emergency Preparedness Coordinator (Temporary)	1.00
AmeriCorps, VISTA (Volunteer)	1.00
Records Management Specialist – Transport Fee (Temporary Position Ends 12/30/2012)	0.50
<b>Total Administrative and Support FTEs</b>	<b>16.00</b>
<b>Percentage of Administrative and Support Staff to Total Personnel</b>	<b>15.46%</b>

Three of the positions (2.5 FTEs) are of limited duration: emergency preparedness coordinator, AmeriCorps VISTA (Volunteers in Service to America), and a records management specialist (transport fee). Administration and support staff of KF&BD is comprised of 13.5 FTEs; operational jobs include 90 authorized FTEs. Consequently, the administrative and support function presently includes about 13.0 percent of available human resources. Based on our experience with similar organizations (i.e., medium-sized municipal fire departments using full-

<sup>19</sup> Deputy Chief of Administration is effectively spending 0.50 FTE with responsibilities associated with managing the City of Kirkland Emergency Management program.



time employees to provide all normal services plus fire prevention, fire training, and emergency medical transport), the expected ratio of administrative and support staff to operational staff usually falls somewhere between 15 and 20 percent.<sup>20</sup> While there is no definitive standard for the ratio between administration and operational roles, this suggests that KF&BD has fewer administrative and support personnel than comparable fire departments.

KF&BD is providing BLS (basic life support), EMS transport, fire and life safety plan review and inspections, hazardous materials response, fire training, emergency management, and a limited public education program with a relatively few number of administrative and support positions. In our experience, we find that fire departments often will provide one or two additional or advanced services. KF&BD is among a select few that offer virtually all aspects of emergency services with a minimum of non-emergency staff.

***Kudos 2: Kirkland Fire and Building Department provides or provides for virtually all emergency services that are available and offered by municipal fire departments.***

#### Staffing by Division and Program

KF&BD uses an internal budgetary framework to define the division of tasks, resource deployment, and coordination of activities. Divisions have authority, responsibility, and accountability for programs. Figure 30 summarizes the distribution of the 13.5 career FTEs in administration and support by division and program.

**Figure 30: Administration and Support FTEs by Division and Program**

Division or Program	FTEs
Fire Department	7.0
Fire Prevention	4.5
Training	2.0
EMS	0.0

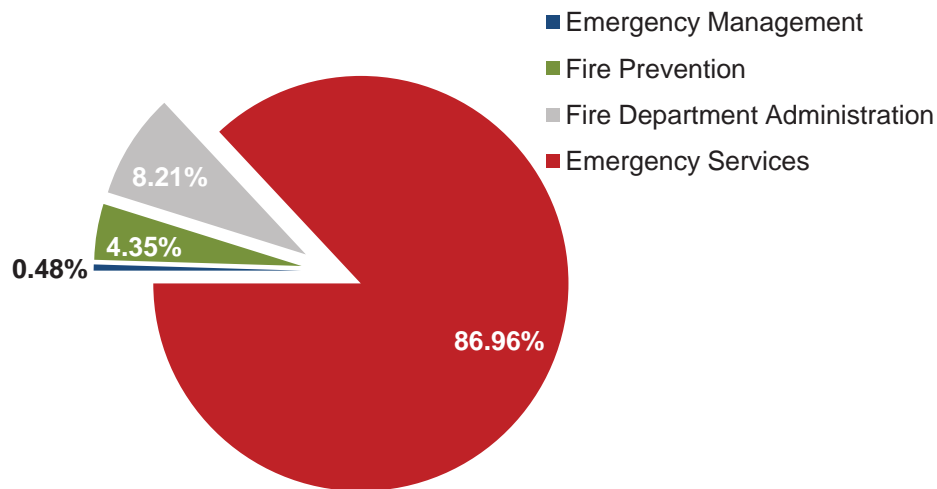
In the City budget, under the umbrella of the fire and building department, each of the divisions and programs provides a detail of functions (responsibilities), accomplishments, objectives, and budget highlights. A division/program summary lists a review, projection, and changes in

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<sup>20</sup> Based on ESCI's experience with 800 plus clients.

staffing and budget.<sup>21</sup> The percentage of the FTEs devoted to each budgetary division and program (taken from the City's adopted budget) is summarized by the following pie chart.

**Figure 31: KF&BD Staffing by Division and Program**



As is expected, the majority of the department's FTEs (approximately 87 percent) are dedicated to the delivery of fire suppression and emergency medical services. Noticeably absent from the staffing figure is a lack of personnel dedicated to management of emergency medical services. As a general rule, fire departments serving a community of similar size and character that provide EMS and transport services have a full-time staff person dedicated to managing the medical services program.

City budget documents for the fire department do not include administrative functions as a division. Administrative services include those functions necessary to support the operation of the other divisions in a department and assure quality control. The budget document for the City of Kirkland separates administrative services for some departments such as planning and community development and the police department. To better quantify the administrative services function for the Kirkland Fire & Building Department, we recommend that an administrative division budget for the department have two categories: 1) fire and 2) building.

<sup>21</sup> Source: *Fiscal year 2011 – 2012 Final Budget*, City of Kirkland, page 222.

The next table lists the staffing for the fire and building department according to the City of Kirkland fiscal year 2011 – 2012 budget by division/program and the change from fiscal year 2007 – 2008.<sup>22</sup>

**Figure 32: Position Summary FTEs, Fiscal Year 2007 – 2008 and 2011 – 2012**

Divisions and Programs	2008 FTEs	2012 FTEs	Change
Administration	6.00 <sup>23</sup>	6.00	0.00
Emergency Services	79.00	93.00	14.00
Fire Prevention	4.00	3.50	(0.50)
Building Services	20.53	18.28	(2.25)
Emergency Management	0.00	0.00	0.00
<b>Total</b>	<b>109.53</b>	<b>120.78</b>	<b>11.25</b>

KF&BD saw a net increase of 11.25 FTEs between fiscal year 2007 – 2008 and fiscal year 2011 – 2012 according to the City budget. With 14.00 additional FTEs budgeted, emergency services had the largest increase; administration static, while two other programs lost FTEs (fire prevention and building services). Nine of the emergency services FTEs are a result of the City’s 2011 annexation of a portion of the Woodinville service area. Fire department administration has seen an actual decrease in personnel with the loss of one FTE administrative support position that was funded by King County Fire District #41. This administrative support position was eliminated at the time of annexation.

KF&BD has no internal capacity for the analysis of data and implementing of outcomes. The problem is seen as two-fold. First, is the limited availability and integration of electronic data. Second is the lack of an analyst or administrative staffer with the knowledge and skill set to perform analysis. ESCI recommends that one FTE administrative assistant for EMS and one FTE analyst be added to the administrative support function of the KF&BD.

### Emergency Operations

It takes an adequate and well-trained staff of emergency service responders to put the apparatus and equipment to its best use in mitigating an emergency incident. Too few workers at an emergency scene lessen the effectiveness of the response and increase the risk of injury to those at the scene.

<sup>22</sup> Ibid.

<sup>23</sup> 0.8 FTE was provided by King County Fire District #41. This administrative support position was eliminated at the time of annexation.

Direct customer services in emergency operations are provided by 90 career personnel. The following figure lists the number of emergency operations personnel by position and rank.

**Figure 33: Emergency Operations Staffing**

Position	FTEs
Battalion Chief	3
Captain	10
Lieutenant	11
Firefighter & Firefighter/EMT	66
<b>Total Authorized</b>	<b>90</b>

The 2011 – 2012 budget of the City called for “elimination of the remaining 0.45 FTE Community Education and Information Specialist position; institute “rolling brown outs” when staffing falls below minimum levels. Note that if the EMS Transport Fees are approved, the funds could be used to restore this reduction.” Subsequent to budget adoption, approval was received to implement the EMS transport fee in order to maintain a minimum emergency daily staffing level of 19 personnel (18 plus 1 for annexation).

#### Staffing by Risk

Time matters a great deal in the achievement of an effective outcome to an emergency event. Time, however, isn't the only factor. Delivering sufficient numbers of properly trained, appropriately equipped personnel within the critical time period completes the performance metric. For medical emergencies this can vary based on the nature of the emergency. Many medical emergencies are not time critical. However, for serious trauma, cardiac arrest, or conditions that may lead to cardiac arrest, response time is very critical.

Equally critical is delivering enough personnel adequately equipped to the scene to perform all of the concurrent tasks required to deliver quality emergency care. For a cardiac arrest this can be up to six medical personnel; two to perform CPR, one or two to set up and operate advanced medical equipment, one to record the actions taken by emergency care workers, and one to direct patient care. Thus, for a medical emergency the real test of performance is the time it takes to provide the personnel and equipment needed to deal effectively with the patient's condition, not necessarily the time it takes for the first person to arrive.

Fire emergencies are even more resource critical. Again, the true test of performance is the time it takes to deliver sufficient personnel to initiate application of water on the fire. This is the only practical method to reverse the continuing internal temperature increases and ultimately

prevent flashover. The arrival of one person with a portable radio does not provide fire intervention capability and should not be counted as “arrival” by the fire department. Effective operations at the scene of fire emergencies also depend on the arrival of enough trained personnel to perform all of the duties and tasks required to control a fire event. Tasks that must be performed can be broken down into two key components; life safety, and fire flow.

Life safety tasks are based on the number of building occupants, their location, status, and ability to take self-preservation action. Life safety tasks involve the search, rescue, and evacuation of victims. The fire flow component involves delivering sufficient quantities of water to extinguish the fire, and creating an environment within the building that allows entry by firefighters.

The number and types of tasks needing simultaneous action will dictate the minimum number of firefighters required to combat different types of fires. In the absence of adequate personnel to perform concurrent action, the command officer must prioritize the tasks, completing some in chronological order rather than at the same time, reducing overall emergency scene effectiveness. These tasks include: command, scene safety, search and rescue, fire attack, water supply, pump operation, ventilation, back-up line, and staffing a rapid intervention team (RIT). The following table is an illustration of fire ground staffing based on level of risk. The following definitions apply to the table (below):

- Low Risk – Fires involving small sheds and other outbuildings, larger vehicles and similar—characterized by sustained attack fire flows typically less than 250 gallons per minute.
- Moderate Risk – Fires involving single-family dwellings and equivalently sized commercial office properties—sustained attack fire flows range between 250 gallons per minute to 1,000 gallons per minute.
- High Risk – Fires involving larger commercial properties with sustained attack fire flows between 1,000 gallons per minute and 2,500 gallons per minute
- Maximum Risk – Fires in buildings with unusual hazards such as high-rise buildings, hazardous materials facilities, very large buildings, and high life risk properties (nursing homes, hospitals, etc.). Though they may not require large sustained attack fire flows they do require more personnel to perform tasks required for effective control.

**Figure 34: Number of Firefighting Personnel Based Upon Level of Risk**

Task	Maximum Risk	High Risk	Moderate Risk	Low Risk
Attack Line	4	4	2	2
Search and Rescue	4	2	2	N/A
Ventilation	4	2	2	N/A
Back-Up Line/Rapid Intervention Team	8	6	4	2
Pump Operator	1	1	1	1
Water Supply	1	1	1	N/A
Utilities Support	1	1	1	N/A
Command/Safety*	2	2	2	1
Forcible Entry**	N/A	N/A	N/A	N/A
Salvage**	N/A	N/A	N/A	N/A
Overhaul**	N/A	N/A	N/A	N/A
Communication**	1	N/A	N/A	N/A
Operations Section Chief	1	N/A	N/A	N/A
Logistics	1	N/A	N/A	N/A
Planning**	1	N/A	N/A	N/A
Staging**	1	N/A	N/A	N/A
Rehabilitation	1	N/A	N/A	N/A
Division/Group Supervisors**	2	N/A	N/A	N/A
High Rise Evacuation**	10	N/A	N/A	N/A
Stairwell Support**	10	N/A	N/A	N/A
<b>Totals</b>	<b>53</b>	<b>19</b>	<b>15</b>	<b>6</b>

\* Can often be handled by the first due officer.

\*\* At maximum and high-risk fires, additional personnel may be needed.

Delivering sufficient numbers of personnel to the scene to accomplish all the various tasks required to effectively control an emergency is essential. As is shown by the preceding figure (Figure 34), national criteria suggests at least 15 personnel be on scene of a fire in a single family home for safe and effective operations. More personnel are needed as the size of the structure, the complexity of the incident, or the life safety risk increases or when special hazards exist. At minimum daily staffing levels, KF&BD has 19 emergency personnel available for immediate response to emergencies.

In communities around the country, the number of fire calls has declined over the past decade. Yet as the frequency of fires has diminished, in part due to stricter fire codes and an emphasis on safety education, the workload of fire departments has risen sharply—medical calls, hazardous materials calls, and every sort of household emergency is now addressed by fire departments. Therefore, although the frequency of fires has diminished, the need for a ready group of firefighters has increased.

Although modern codes tend to make fires in newer structures less frequent, today's energy-efficient construction (designed to hold heat during the winter) also tends to confine the heat of a hostile fire. In addition, research has shown that modern furnishings generally burn hotter (due to synthetics), and roofs collapse sooner because prefabricated roof trusses separate easily after a very short exposure to flame. In the 1970s, scientists at the NIST (National Institute of Standards and Technology) found that after a fire breaks out, building occupants had about 17 minutes to escape before being overcome by heat and smoke. Today, that estimate is three minutes.<sup>24</sup> The necessity of firefighters arriving on the scene of a fire in the shortest span of time is more critical now than ever.

Along with a quick response, a robust, well-trained, and appropriately equipped complement of emergency workers is needed to successfully mitigate structural fires. Too few firefighters at an emergency scene decreases effectiveness and increase the risk to both the citizens and the firefighters.

The time required to place workers on the scene of an emergency is crucial to the quality of service. Longer response times occur in the more remote areas of the City, during the morning and evening commute (heavy traffic), and when incidents occur simultaneously. A higher percentage of calls occur between the hours of 8:00 AM and 8:00 PM. KF&BD uses a static or constant staffing model with the same number of personnel available all hours of the day. Based on 15 personnel to accomplish the tasks of a moderate risk fire event, KF&BD emergency operations staffing is at a minimum. ESCI recommends that the City add career personnel during periods of higher call volume to maintain adequate personnel to staff for a moderate risk fire event.

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<sup>24</sup> National Institute of Standards and Technology, *Performance of Home Smoke Alarms, Analysis of the Response of Several Available Technologies in Residential Fire Settings*, Bukowski, Richard, et al.

## Current Service Delivery Infrastructure

The delivery of fire suppression and rescue services is no more effective than the sum of its parts. It requires efficient notification of an emergency, rapid response from well-located facilities, appropriate apparatus, with sufficient staffing, following a well-practiced plan of action. The most visible and valued of the services provided by the KF&BD is the response to and control of emergency events.

To operate in the emergency response environment effectively, fire departments must capitalize on managing various aspects of a large business enterprise. A lion's share of this effort goes into supporting the primary mission. However, there are additional requirements that have to be met and a substantial infrastructure that must exist in order for the organization to function at its best. A key component of an agency's service delivery infrastructure is its equipment and fire stations. The following table summarizes KF&BD's capital facilities and apparatus resources:

**Figure 35: Service Delivery Infrastructure**

Resource	Number
Fire Stations	6
Engines, Front Line	5
Engines, Reserve	2
Ladder (Aerial) Trucks	1
Ladder (Aerial) Trucks, Reserve	0
Aid Units, Front Line	6
Aid Units, Reserve	2
Command	1
Command, Reserve	1
Boats	0
Air Units	1
Water Tenders	0

A comparison of resources between KF&BD and five other fire agencies in Washington that provide service to similar sized communities is found in Appendix F: Comparable Providers.

### WSRB (Washington Surveying and Rating Bureau)

The WSRB (Washington Surveying and Rating Bureau) evaluates all Washington communities for their fire protection/suppression capability using a schedule approved by the Washington State Office of the Insurance Commissioner. WSRB assigns each community a Protection Class of 1 through 10, where 1 indicates exemplary fire protection capabilities and 10 indicates the capabilities, if any, are insufficient for insurance credit. The insurance classification developed under the schedule is one of several elements used in the development of fire insurance rates. Although the schedule provisions may be of assistance to municipal officials



when used in conjunction with their analysis of local needs, capabilities, and priorities, the schedule is not intended to serve as a primary planning guide for local fire protection. WSRB recommendations offered in connection with insurance classifications are helpful to municipal officials when reviewed in combination with more specific studies of local needs by consultants, staff, or local task forces in arriving at fire protection decisions based upon an analysis of local priorities and financial capabilities.<sup>25</sup>

The grading process is conducted on both a request and non-request basis. To determine a community's Protection Class WSRB objectively evaluates four major areas:<sup>26</sup>

- Fire Department – WSRB reviews engine companies, ladder companies, distribution of fire stations and fire companies, automatic aid received, response to alarms, equipment carried on apparatus, apparatus maintenance, pumping capacity, reserve apparatus, department personnel and training.
- Water Supply – Water supplies used are reviewed to determine their adequacy for fire-suppression purposes. The review involves calculating required fire flows (gpm) for buildings and conducting flow tests to measure water pressures (psi) and volume (gpm). We also consider hydrant size, type, and installation, as well as the inspection frequency and condition of fire hydrants.
- Emergency Communications Systems – The 9-1-1 system is evaluated including facilities, handling and dispatching fire alarms, dispatch personnel and training.
- Fire Safety Control – Fire prevention activities such as fire code enforcement, public education and building code enforcement are reviewed.

After completing the field survey, WSRB analyzes the data and calculates the Protection Class based on a total maximum of 5,000 points of deficiency (see Figure 36 below). The community receives a notification letter identifying the new Protection Class along with a summary report of findings.

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<sup>25</sup> WSRB Grading Schedule and Commentary for Municipal Fire Protection, WSRB (Washington Surveying and Rating Bureau), 2006.

<sup>26</sup> Protection Class Evaluation Overview, WSRB (Washington Surveying and Rating Bureau), Retrieved March 28, 2012.

**Figure 36: Points of Deficiency and Community Class**

Community Class	Points of Deficiency
1 <sup>st</sup> Class	0 to 500 Points
2 <sup>nd</sup> Class	501 to 1,000 Points
3 <sup>rd</sup> Class	1,001 to 1,500 Points
4 <sup>th</sup> Class	1,501 to 2,000 Points
5 <sup>th</sup> Class	2,001 to 2,500 Points
6 <sup>th</sup> Class	2,501 to 3,000 Points
7 <sup>th</sup> Class	3,001 to 3,500 Points
8 <sup>th</sup> Class	3,501 to 4,000 Points
9 <sup>th</sup> Class	4,001 to 4,500 Points
10 <sup>th</sup> Class	More than 5,000 Points

KF&BD's most recent survey by WSRB was in June 1995. Figure 37 is a summary of the survey listed by area, points of deficiency, relative values, and classification.

**Figure 37: KF&BD Grading Schedule, June 1995**

Area	Point of Deficiency	Relative Values
Water Supply	435	1,950
Fire Department	692	1,950
Fire Service Communications	49	450
Fire Safety Control	445	650
Climatic Conditions	52	
Divergence between Water Supply and Fire Department	0	
<b>Total Points</b>	<b>1,673</b>	<b>5,000</b>
<b>Classification</b>	<b>4</b>	

KF&BD is currently rated as a Class 4 by the WSRB for properties within five miles of a fire station. The largest point of deficiency was related to the fire department (35.49 percent). Since the survey in 1995, improvements in staffing, apparatus, and fire stations (Fire Station No. 26 [North Rose Hill] and Fire Station No. 21 [Forbes Creek]) suggest that the KF&BD would benefit from a re-evaluation by WSRB. Also relevant is the annexation of June 2011 that increased the size of the City.

ESCI recommends that a request be made to WSRB to conduct an evaluation of the fire and suppression capabilities of KF&BD. The request must be signed by the mayor and should include a brief explanation of improvements made that would warrant a new evaluation.

### **Conclusion – Fire and Building Department**

The single largest change to occur for the City of Kirkland in years was the annexation in June 2011 of a large area and expansion by 7.8 square miles. City population increased from 2010

by an estimated 62.24 percent to 80,505. KF&BD was already providing contract fire and emergency services to Fire District #41 and added coverage to a portion of Fire District #36 (Woodinville) and a small area of Fire District #34 (Redmond) as a result of the annexation. While KF&BD added emergency response personnel to serve the annexed area, there was no corresponding increase in administration and support. With three KF&BD administration and support positions being of limited duration the personnel resources dedicated to supporting service delivery will decrease. There was a loss of the 0.8 FTE provided by King County Fire District #41. This administrative support position was eliminated at the time of annexation.

KF&BD's greatest percent of calls for service are related to emergency medical incidents and in 2011 the department began the practice of billing for EMS transport services. Emergency agencies of like size and character commonly have staff dedicated to supporting EMS, KF&BD does not. ESCI believes that given the increases in operational personnel and EMS responsibilities there is a need to increase administrative support personnel in a ratio equal to added services and emergency service personnel.

### **Recommendation Summary – Fire and Building Department**

- ❖ Recommendation 1: Amend job descriptions to accurately reflect roles and expectations for administration and support staff. (Implementation Order 1)
- ❖ Recommendation 2: Create a budget category for administrative services for the fire and for building departments. (Implementation Order 7)
- ❖ Recommendation 3: Increase emergency operations by adding a BLS aid unit staffed between 8:00 AM and 8:00 PM to maintain adequate personnel for a moderate risk fire event. (Implementation Order 5)
- ❖ Recommendation 4: Request WSRB to conduct an evaluation of the fire and suppression capabilities of KF&BD. (Implementation Order 8)
- ❖ Recommendation 5: Annually conduct a detailed analysis of revenue versus expenditure to validate that EMS transportation activity is meeting stated goals established by the City. (Implementation Order 6)
- ❖ Recommendation 6: Add a Medical Service Administrator (MSA) at the rank of division chief to manage the medical division. (Implementation Order 2)
- ❖ Recommendation 7: Bill for EMS transport when responding and transporting patients outside of the City of Kirkland. (Implementation Order 4)
- ❖ Recommendation 8: Add one FTE administrative assistant for EMS and one FTE financial analyst to administrative support functions. (Implementation Order 3)

